

CO-PRODUCING HYDROGEN AND POWER BY BIOMASS GASIFICATION

ABSTRACT OF DISCLOSURE

[0028] A method for co-producing hydrogen and electrical power comprises utilizing an intermittent renewable energy source to generate energy for producing hydrogen and oxygen and subsequently transferring at least a portion of the energy to a production system to produce the hydrogen and the oxygen. The current technique further comprises channeling at least a portion of the hydrogen to a hydrogen-delivery system configured to deliver the hydrogen from the hydrogen-delivery system to at least one of a power generation system or a hydrogen-storage system and channeling at least a portion of the oxygen to an oxygen delivery system configured to deliver the oxygen from the oxygen delivery system to a biomass gasification system that produces a synthesis gas by partial oxidation of a biomass feedstock. Further, this technique includes channeling at least a portion of the synthesis gas to the power generation system to produce electrical power therefrom.